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10/593,338	09/19/2006	Kazuhiro Oda	295978US0PCT	8966

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EXAMINER	
ROE, JESSEE RANDALL	
ART UNIT	**PAPER NUMBER**
1793	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/593,338	ODA ET AL.	
	Examiner	Art Unit	
	Jessee Roe	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 May 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *5,7-9 and 11-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *5,7-9 and 11-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 26 May 2009 has been entered.

Status of the Claims

Claims 5, 7-9 and 11-26 are pending wherein claims 5 and 7-9 are amended, claims 1-4, 6 and 10 are canceled and claims 11-26 are new.

Status of Previous Objections

The previous objection to the specification under 35 U.S.C. 132(a) due to the amendment filed 16 December 2008 is withdrawn in view of the amendment to the specification filed 26 May 2009 providing the originally disclosed range of 0.3 to 3 % by mass of manganese.

Status of Previous Rejections

The previous rejection of claims 5 and 7-9 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement is withdrawn in view of the Applicant's amendments to claims 5 and 7-9.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 5, 7 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishi et al. (US 4,919,736).

In regards to claims 5 and 11, Nishi et al. ('736) discloses aluminum alloys having a composition relative to that of the instant invention as shown in the table below (col. 1, lines 58-68 and col. 3, lines 6-14).

Element	From Instant Claims (mass percent)	Nishi et al. ('736) (mass percent)	Overlap (mass percent)
Si	13 – 25	13.5 – 20	13.5 – 20
Cu	2 – 8	6 – 9	6 – 8
Fe	0.5 – 3	1.6 – 3	1.6 – 3
Mn	1 – 3	0.5 – 2	1 – 2
P	0.001 – 0.02	0.001 – 0.1	0.001 – 0.02
Ni	0.5 – 6	0 – 0.5	0.5
Al	balance	balance	balance

The Examiner notes that the aluminum alloy composition disclosed by Nishi et al. ('736) overlaps the composition of the instant invention, which is prima facie evidence of

obviousness. MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the claimed amounts of silicon, copper, iron, manganese, phosphorus, and nickel for an aluminum alloy from the amounts disclosed by Nishi et al. ('736) because Nishi et al. ('736) discloses the same utility throughout the disclosed ranges.

With respect to the recitation "wherein the total amount of the combination of iron, manganese, and nickel is 3.0% by mass or greater" as in lines 4-5 of claim 5, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, In re Cooper and Foley 1943 C.D. 357, 553 O.G. 177., 57 USPQ 117, Sakalatwalla v. Marburg, 620 O.G. 685, 1949 C.D. 77, and In re Pilling, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. In the absence of evidence to the contrary, the selection of the proportions of iron, manganese, and nickel would appear to require no more than routine investigation by those of ordinary skill in the art. In re Austin, et al., 149 USPQ 685,688. It would have been obvious to one of ordinary skill in the art to select the claimed ranges of iron, manganese, and nickel from the aluminum alloys disclosed by Nishi et al. ('736) because Nishi et al. ('736) teach the same utility throughout the disclosed ranges.

With respect to the recitation "said aluminum alloy having a Young's modulus of 90 GPa or more and a coefficient of linear thermal expansion of 18×10^{-6}/°C or less" as recited in lines 5-8 of claim 5, the Examiner notes that the composition disclosed by Nishi et al. ('736) would be the same or substantially similar to that of the instant invention. Therefore, these properties would be expected. MPEP 2112.01 I.

In regards to claims 7 and 12, Nishi et al. (‘736) discloses aluminum alloys having a composition relative to that of the instant invention as shown in the table below (col. 1, lines 58-68, col. 2, lines 58-63 and col. 3, lines 6-14).

Element	From Instant Claims (mass percent)	Nishi et al. (‘736) (mass percent)	Overlap (mass percent)
Si	13 – 25	13.5 – 20	13.5 – 20
Cu	2 – 8	6 – 9	6 – 8
Fe	0.5 – 3	1.6 – 3	1.6 – 3
Mn	1 – 3	0.5 – 2	1 – 2
P	0.001 – 0.02	0.001 – 0.1	0.001 – 0.02
Ni	0.5 – 6	0 – 0.5	0.5
Mg	0.05 – 1.5	0 – 3	0.05 – 1.5
Al	balance	balance	balance

The Examiner notes that the aluminum alloy composition disclosed by Nishi et al. ('736) overlaps the composition of the instant invention, which is prima facie evidence of obviousness. MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the claimed amounts of silicon, copper, iron, manganese, phosphorus, nickel and magnesium for an aluminum alloy from the amounts disclosed by Nishi et al. ('736) because Nishi et al. ('736) disclose the same utility throughout the disclosed ranges.

With respect to the recitation “wherein the total amount of the combination of Iron and manganese is 3.0% by mass or greater” as in lines 7-8 of claim 7, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, In re Cooper and Foley 1943 C.D. 357, 553 O.G. 177., 57 USPQ 117, Sakalatwalla v. Marburg, 620 O.G. 685, 1949 C.D. 77, and In re Pilling, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. In the absence of evidence to the

contrary, the selection of the proportions of iron, manganese, and nickel would appear to require no more than routine investigation by those of ordinary skill in the art. In re Austin, et al., 149 USPQ 685,688. It would have been obvious to one of ordinary skill in the art to select the claimed ranges of iron, manganese, and nickel from the aluminum alloys disclosed by Nishi et al. ('736) because Nishi et al. ('736) teaches the same utility throughout the disclosed ranges.

With respect to the recitation "said aluminum alloy having a Young's modulus of 90 GPa or more and a coefficient of linear thermal expansion of 18 x 10^{-6}/°C or less" as recited in lines 8-10 of claim 7, the Examiner notes that the composition disclosed by Nishi et al. ('736) would be the same or substantially similar to that of the instant invention. Therefore, these properties would be expected. MPEP 2112.01 I.

Claims 5, 7-9 and 11-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horikawa et al. (JP 2000-204428A).

In regards to claim 5, Horikawa et al. (JP '428) discloses aluminum alloys having a composition relative to that of the instant invention as shown in the table below (abstract, [0007] and [0010]).

Element	From Instant Claims (mass percent)	Horikawa et al. (JP '428) (mass percent)	Overlap (mass percent)
Si	13 – 25	11 – 16	13 – 16
Cu	2 – 8	3 – 7	3 – 7
Fe	0.5 – 3	0.2 – 1.5	0.5 – 1.5
Mn	1 – 3	0.2 – 1	1
P	0.001 – 0.02	0.003 – 0.015	0.003 – 0.015
Ni	0.5 – 6	3 – 7	3 – 6
Mg	-	0.5 – 2.0	-
Al	balance	balance	balance

The Examiner notes that the aluminum alloy composition disclosed by Horikawa et al. (JP ‘428) overlaps the composition of the instant invention, which is prima facie evidence of obviousness. MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the claimed amounts of silicon, copper, iron, manganese, phosphorus, and nickel for an aluminum alloy from the amounts disclosed by Horikawa et al. (JP ‘428) because Horikawa et al. (JP ‘428) disclose the same utility throughout the disclosed ranges.

With respect to the language “consisting of" and the 0.5 to 2.0 weight percent magnesium as disclosed by Horikawa et al. (JP '428), the Examiner notes that Horikawa et al. (JP '428) disclose that 0.5 to 2.0 weight percent magnesium present in the aluminum alloy would remarkably improve mechanical strength [0010]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to omit the 0.5 to 2.0 weight percent magnesium where remarkable mechanical strength would not be required or desired. MPEP 2144.04 (II) and 2123 (II).

With respect to the recitation “wherein the total amount of the combination of iron, manganese, and nickel is 3.0% by mass or greater” as in lines 5-6 of claim 5, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, In re Cooper and Foley 1943 C.D. 357, 553 O.G. 177., 57 USPQ 117, Sakalatwalla v. Marburg, 620 O.G. 685, 1949 C.D. 77, and In re Pilling, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. In the absence of evidence to the contrary, the selection of the proportions of iron, manganese, and nickel would appear to require no more than routine investigation by those of ordinary skill in the art. In re

Austin, et al., 149 USPQ 685,688. It would have been obvious to one of ordinary skill in the art to select the claimed ranges of iron, manganese, and nickel from the aluminum alloys disclosed by Horikawa et al. (JP '428) because Horikawa et al. (JP '428) teach the same utility throughout the disclosed ranges.

With respect to the recitation "said aluminum alloy having a Young's modulus of 90 GPa or more and a coefficient of linear thermal expansion of 18 x 10^{-6}/°C or less" as recited in lines 5-8 of claim 5, the Examiner notes that the composition disclosed by Nishi et al. ('736) would be the same or substantially similar to that of the instant invention. Therefore, these properties would be expected. MPEP 2112.01 I.

With respect to the recitation "wherein the amount of manganese is 1.2-3% by mass" in claims 11 and 15, the Examiner notes that Horikawa et al. (JP '428) teaches that if manganese exceeds 1.0%, then the system will become big and rough and fatigue at elevated temperature reinforcement will be reduced. A known or obvious composition does not become patentable simply because it has been described as somewhat inferior to some other product for the same use. MPEP 2123 II.

Still regarding claim 15, Horikawa et al. (JP '428) discloses 3 to 7 weight percent nickel, which overlaps the claimed range of 1 to 6 weight percent nickel [0007].

In regards to claims 19 and 23, Horikawa et al. (JP '428) discloses 3 to 7 weight percent nickel [0007].

In regards to claim 7, Horikawa et al. (JP '428) discloses aluminum alloys having a composition relative to that of the instant invention as shown in the table below

(abstract, [0007] and [0010]).

Element	From Instant Claims (mass percent)	Horikawa et al. (JP '428) (mass percent)	Overlap (mass percent)
Si	13 – 25	11 – 16	13 – 16
Cu	2 – 8	3 – 7	3 – 7
Fe	0.5 – 3	0.2 – 1.5	0.5 – 1.5
Mn	1 – 3	0.2 – 1	1
P	0.001 – 0.02	0.003 – 0.015	0.003 – 0.015
Ni	0.5 – 6	3 – 7	3 – 6
Cr	0.1 – 1.0	0.01 – 0.3	0.1 – 0.3
Mg	-	0.5 – 2.0	-
Al	balance	balance	balance

The Examiner notes that the aluminum alloy composition disclosed by Horikawa et al. (JP '428) overlaps the composition of the instant invention, which is prima facie evidence of obviousness. MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the claimed amounts of silicon, copper, iron, manganese, phosphorus, nickel, chromium and magnesium for an aluminum alloy from the amounts disclosed by Horikawa et al. (JP '428) because Horikawa et al. (JP '428) disclose the same utility throughout the disclosed ranges.

With respect to the language "consisting of" and the 0.5 to 2.0 weight percent magnesium as disclosed by Horikawa et al. (JP '428), the Examiner notes that Horikawa et al. (JP '428) disclose that 0.5 to 2.0 weight percent present in the aluminum alloy would remarkably improve mechanical strength [0010]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to omit the 0.5 to 2.0 weight percent magnesium where remarkable mechanical strength would not be required or desired. MPEP 2144.04 (II) and 2123 (II).

With respect to the recitation "wherein the total amount of the combination of

Iron and manganese is 3.0% by mass or greater" as in lines 7-8 of claim 7, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, In re Cooper and Foley 1943 C.D. 357, 553 O.G. 177., 57 USPQ 117, Sakalatwalla v. Marburg, 620 O.G. 685, 1949 C.D. 77, and In re Pilling, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. In the absence of evidence to the contrary, the selection of the proportions of iron and manganese would appear to require no more than routine investigation by those of ordinary skill in the art. In re Austin, et al., 149 USPQ 685,688. It would have been obvious to one of ordinary skill in the art to select the claimed ranges of iron and manganese from the aluminum alloys disclosed by Horikawa et al. (JP '428) because Horikawa et al. (JP '428) teach the same utility throughout the disclosed ranges.

With respect to the recitation "said aluminum alloy having a Young's modulus of 90 GPa or more and a coefficient of linear thermal expansion of 18 x 10^{-6}/°C or less" as recited in lines 8-10 of claim 7, the Examiner notes that the composition disclosed by Nishi et al. ('736) would be the same or substantially similar to that of the instant invention. Therefore, these properties would be expected. MPEP 2112.01 I.

With respect to the recitation "wherein the amount of manganese is 1.2-3% by mass" in claims 12 and 16, the Examiner notes that Horikawa et al. (JP '428) teaches that if manganese exceeds 1.0%, then the system will become big and rough and fatigue at elevated temperature reinforcement will be reduced. A known or obvious composition does not become patentable simply because it has been described as somewhat inferior to some other product for the same use. MPEP 2123 II.

Still regarding claim 16, Horikawa et al. (JP ‘428) discloses 3 to 7 weight percent nickel, which overlaps the claimed range of 1 to 6 weight percent nickel [0007].

In regards to claims 20 and 24, Horikawa et al. (JP ‘428) discloses 3 to 7 weight percent nickel [0007].

In regards to claim 8, Horikawa et al. (JP ‘428) discloses aluminum alloys having a composition relative to that of the instant invention as shown in the table below (abstract, [0007] and [0010]).

Element	**From Instant Claims (mass percent)**	**Horikawa et al. (JP ‘428) (mass percent)**	**Overlap (mass percent)**
Si	13 – 25	11 – 16	13 – 16
Cu	2 – 8	3 – 7	3 – 7
Fe	0.5 – 3	0.2 – 1.5	0.5 – 1.5
Mn	1 – 3	0.2 – 1	1
P	0.001 – 0.02	0.003 – 0.015	0.003 – 0.015
Ni	0.5 – 6	3 – 7	3 – 6
Cr	0.1 – 1.0	0.01 – 0.3	0.1 – 0.3
Mg	-	0.5 – 2.0	-
Al	balance	balance	balance

The Examiner notes that the aluminum alloy composition disclosed by Horikawa et al. (JP ‘428) overlaps the composition of the instant invention, which is prima facie evidence of obviousness. MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the claimed amounts of silicon, copper, iron, manganese, phosphorus, nickel and chromium for an aluminum alloy from the amounts disclosed by Horikawa et al. (JP ‘428) because Horikawa et al. (JP ‘428) disclose the same utility throughout the disclosed ranges.

With respect to the language “consisting of" and the 0.5 to 2.0 weight percent magnesium as disclosed by Horikawa et al. (JP '428), the Examiner notes that Horikawa

et al. (JP '428) disclose that 0.5 to 2.0 weight percent present in the aluminum alloy would remarkably improve mechanical strength [0010]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to omit the 0.5 to 2.0 weight percent magnesium where remarkable mechanical strength would not be required or desired. MPEP 2144.04 (II) and 2123 (II).

With respect to the recitation "wherein the total amount of the combination of iron, manganese, and nickel is 3.0% by mass or greater" as in lines 5-6 of claim 8, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, In re Cooper and Foley 1943 C.D. 357, 553 O.G. 177., 57 USPQ 117, Sakalatwalla v. Marburg, 620 O.G. 685, 1949 C.D. 77, and In re Pilling, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. In the absence of evidence to the contrary, the selection of the proportions of iron, manganese, and nickel would appear to require no more than routine investigation by those of ordinary skill in the art. In re Austin, et al., 149 USPQ 685,688. It would have been obvious to one of ordinary skill in the art to select the claimed ranges of iron, manganese, and nickel from the aluminum alloys disclosed by Horikawa et al. (JP '428) because Horikawa et al. (JP '428) teach the same utility throughout the disclosed ranges.

With respect to the recitation "said aluminum alloy having a Young's modulus of 90 GPa or more and a coefficient of linear thermal expansion of 18×10^{-6}/°C or less" as recited in lines 6-7 of claim 8, the Examiner notes that the composition disclosed by Horikawa et al. (JP '428) would be the same or substantially similar to that of the instant invention. Therefore, these properties would be expected. MPEP 2112.01 I.

With respect to the recitation “wherein the amount of manganese is 1.2-3% by mass” in claims 13 and 17, the Examiner notes that Horikawa et al. (JP ‘428) teaches that if manganese exceeds 1.0%, then the system will become big and rough and fatigue at elevated temperature reinforcement will be reduced. A known or obvious composition does not become patentable simply because it has been described as somewhat inferior to some other product for the same use. MPEP 2123 II.

Still regarding claim 17, Horikawa et al. (JP ‘428) discloses 3 to 7 weight percent nickel, which overlaps the claimed range of 1 to 6 weight percent nickel [0007].

In regards to claims 21 and 25, Horikawa et al. (JP ‘428) discloses 3 to 7 weight percent nickel [0007].

In regards to claim 9, Horikawa et al. (JP ‘428) disclose aluminum alloys having a composition relative to that of the instant invention as shown in the table below (abstract, [0007] and [0010]).

Element	**From Instant Claims (mass percent)**	**Horikawa et al. (JP ‘428) (mass percent)**	**Overlap (mass percent)**
Si	13 – 25	11 – 16	13 – 16
Cu	2 – 8	3 – 7	3 – 7
Fe	0.5 – 3	0.2 – 1.5	0.5 – 1.5
Mn	1– 3	0.2 – 1	1
P	0.001 – 0.02	0.003 – 0.015	0.003 – 0.015
Ni	0.5 – 6	3 – 7	3 – 6
Cr	0.1 – 1.0	0.01 – 0.3	0.1 – 0.3
Mg	-	0.5 – 2.0	-
Al	balance	balance	balance

The Examiner notes that the aluminum alloy composition disclosed by Horikawa et al. (JP ‘428) overlaps the composition of the instant invention, which is prima facie

evidence of obviousness. MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the claimed amounts of silicon, copper, iron, manganese, phosphorus, nickel, chromium and magnesium for an aluminum alloy from the amounts disclosed by Horikawa et al. (JP ‘428) because Horikawa et al. (JP ‘428) disclose the same utility throughout the disclosed ranges.

With respect to the language “consisting of" and the 0.5 to 2.0 weight percent magnesium as disclosed by Horikawa et al. (JP '428), the Examiner notes that Horikawa et al. (JP '428) disclose that 0.5 to 2.0 weight percent present in the aluminum alloy would remarkably improve mechanical strength [0010]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to omit the 0.5 to 2.0 weight percent magnesium where remarkable mechanical strength would not be required or desired. MPEP 2144.04 (II) and 2123 (II).

With respect to the recitation “wherein the total amount of the combination of iron, manganese, and nickel is 3.0% by mass or greater” as in lines 7-8 of claim 9, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, In re Cooper and Foley 1943 C.D. 357, 553 O.G. 177., 57 USPQ 117, Sakalatwalla v. Marburg, 620 O.G. 685, 1949 C.D. 77, and In re Pilling, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. In the absence of evidence to the contrary, the selection of the proportions of iron, manganese, and nickel would appear to require no more than routine investigation by those of ordinary skill in the art. In re Austin, et al., 149 USPQ 685,688. It would have been obvious to one of ordinary skill in the art to select the claimed ranges of iron, manganese, and nickel from the aluminum

alloys disclosed by Horikawa et al. (JP '428) because Horikawa et al. (JP '428) teach the same utility throughout the disclosed ranges.

With respect to the recitation "said aluminum alloy having a Young's modulus of 90 GPa or more and a coefficient of linear thermal expansion of 18 x 10^{-6}/°C or less" as recited in lines 8-10 of claim 9, the Examiner notes that the composition disclosed by Horikawa et al. (JP '428) would be the same or substantially similar to that of the instant invention. Therefore, these properties would be expected. MPEP 2112.01 I.

With respect to the recitation "wherein the amount of manganese is 1.2-3% by mass" in claims 14 and 18, the Examiner notes that Horikawa et al. (JP '428) teaches that if manganese exceeds 1.0%, then the system will become big and rough and fatigue at elevated temperature reinforcement will be reduced. A known or obvious composition does not become patentable simply because it has been described as somewhat inferior to some other product for the same use. MPEP 2123 II.

Still regarding claim 18, Horikawa et al. (JP '428) discloses 3 to 7 weight percent nickel, which overlaps the claimed range of 1 to 6 weight percent nickel [0007].

In regards to claims 22 and 26, Horikawa et al. (JP '428) discloses 3 to 7 weight percent nickel [0007].

Response to Declaration Under 37 CFR §1.132

The Declaration under 37 CFR 1.132 filed 26 May 2009 is insufficient to overcome the rejection of claims 5 and 7-9 under 35 U.S.C. 103(a) as being unpatentable over Horikawa et al. (JP 2000-204428A) and claims 5 and 7 under 35

U.S.C. 103(a) as being unpatentable over Nishi et al. (US 4,919,736) as set forth in the last Office action because:

The Applicant declares that aluminum alloys of the instant invention were manufactured along with the alloys of Horikawa et al. (JP ‘428) and Nishi et al. (‘736) and comparisons of the compositions are provided in Table 2 along with the Young’s Modulus and the Coefficient of Linear Thermal Expansion for each alloy. The terms “Poor”, “Good”, and “Excellent” are used to describe the Young’s Modulus and Coefficient of Linear Thermal Expansion of these alloys. However, the standards for which the Applicant associates "Poor", "Good", and "Excellent" are unclear and not defined.

Response to Arguments

Applicant's arguments filed 26 May 2009 have been fully considered but they are not persuasive.

First, the Applicant primarily argues that Horikawa et al. (JP '428) fails to suggest the "consisting of" limitation of independent claims 5 and 7-9, which excludes the "0.50-2.0 wt.% Mg" required by Horikawa et al. (JP ‘428).

In response, the Examiner notes that Horikawa et al. (JP '428) disclose that 0.5 to 2.0 weight percent present in the aluminum alloy would remarkably improve mechanical strength [0010]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to omit the 0.5 to 2.0 weight percent magnesium where remarkable mechanical strength would not be required or desired. MPEP 2144.04 (II) and 2123 (II).

Second, the Applicant primarily argues that any *prima facie* case of obviousness based on Nishi et al. ('736) or Horikawa et al. (JP '428) is rebutted by the significant improvement in both rigidity (Young's modulus of 90 GPa or more) and linear thermal expansion coefficient ($18x10^{-6}$/°C or less) that is achieved by the aluminum alloy of the present invention over the ranges of independent claims 5 and 7-9.

In response, in the Applicant's Declaration under 37 CFR 1.132 filed 26 May 2009, the terms "Poor", "Good", and "Excellent" are used to describe the Young's Modulus and Coefficient of Linear Thermal Expansion of these alloys. However, the standards for which the Applicant associates "Poor", "Good", and "Excellent" are unclear and not defined.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessee Roe whose telephone number is (571)272-5938. The examiner can normally be reached on Monday-Thursday and alternate Fridays 7:00 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V. King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Roy King/
Supervisory Patent Examiner, Art Unit 1793

JR